

ABSTRACT OF THE DISCLOSURE

A reflector is provided as well as a time-of-flight mass spectrometer with a reflector. The mass spectrometers is used for determining the chemical structure of molecules as well as for the quantitative analysis of unknown mixtures of substances. Design effort is minimized, especially 5 for the reflector. The reflector is present in the time-of-flight mass spectrometer to generate an electrostatic field permitting the best possible focusing for the deflection of the ions. The reflector body is made in one piece as a radially symmetrical trough. The reflector is preferably made of a stainless steel or a carrier material with conductive coating and is polished on the inner side of the trough.